

Claims

1. A method of determining a status classification of a vehicle seat occupant comprising the steps:

receiving signals for a predetermined time from a plurality of sensors responsive to a physical characteristic of an occupant at diverse

5 locations on a vehicle seat apparatus;

deriving upper and lower control reference values from the received signals;

deriving maximum and minimum sampled values of each of the received signals during the predetermined time and comparing the derived
10 maximum and minimum sampled values for each of the received signals to the upper and lower control reference values;

if and only if the maximum and minimum sampled values of at least one of the received signals span the upper and lower control reference values for that received signal, performing the following steps (a) through (d):

15 (a) deriving a variance value for each of the received signals for the predetermined time,

(b) identifying two of the received signals having derived variance values that are a selected one of the largest and the smallest of the variance values of the received signals,

20 (c) comparing a ratio of the derived variance values of the selected two of the identified signals with a first relative size factor,

(d) if the ratio exceeds the relative size factor, marking as an outlier one of the two identified received signal having a variance value that is furthest in magnitude from the remainder of the variance
25 values;

and

determining the status characterization from the received signals in a predetermined classification process, but without the use of any received signal marked as an outlier more than a predetermined number of consecutive
30 times.

2. Apparatus for determining a status classification of a vehicle seat occupant comprising:

means for receiving signals for a predetermined time from a plurality of sensors responsive to a physical characteristic of an occupant at
5 diverse locations on a vehicle seat apparatus;

means for deriving maximum and minimum sampled values of each of the received signals during the predetermined time and comparing the derived maximum and minimum sampled values for each of the received signals to defined upper and lower control limits;

10 means for performing the following functions (a) through (d) if and only if the maximum and minimum sampled values of at least one of the received signals spans the upper and lower control limits for that received signal:

(a) deriving a variance value for each of the received
15 signals for the predetermined time,

(b) identifying two of the received signals having derived variance values that are a selected one of larger and smaller than the variance values of the remaining received signals,

(c) comparing a ratio of the derived variance values of the
20 two of the identified signals with a first relative size factor,

(d) if the ratio exceeds the relative size factor, marking as an outlier one of the two identified received signal having a variance value that is furthest in magnitude from the remainder of the variance values;

25 and

means for determining the status characterization from the received signals in a predetermined classification process, but without the use of any received signal marked as an outlier more than a predetermined number of consecutive times.